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Renee Madathil

The University Of Montana

Nicholas C. Heck

Marquette University, nicholas.heck@marquette.edu

David Schuldborg

The University Of Montana

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Burnout in Psychiatric Nursing: Examining the Interplay of Autonomy, Leadership Style, and Depressive Symptoms

Renee Madathil

Department of Psychology, University of Montana

Nicholas C. Heck

Department of Psychology, University of Montana

David Schuldberg

Department of Psychology, University of Montana

Abstract

It is important to consider ways in which nurses can be protected from experiencing the effects of burnout. This study examined the relationships between leadership style of psychiatric nurse supervisors, work role autonomy, and psychological distress in relation to psychiatric nurse burnout. Eighty-nine psychiatric nurses from Montana and New York hospitals completed an online survey that assessed their work-related experiences. Overall, results of this study indicate that the participants were experiencing high levels

of emotional exhaustion and depersonalization when compared to a normative sample of mental health workers. Results also showed that leadership style and work role autonomy are likely to be environmental factors that protect against burnout in nurses. Finally, it was shown that the relationship between depressive symptoms and the burnout component of personal accomplishment may be influenced by nurses' perceptions of the leadership style in their work environment. These findings are important because nurse supervisor leadership styles and amount of autonomy are characteristics of the work environment that may be amenable to change through training and intervention.

The construct of burnout was first described by Freudenberger (1974) referring to the emotional exhaustion of public service workers. Subsequently, Maslach (1982) identified the effort of client contact as an important antecedent to burnout. Burnout has been distinguished by three components: feelings of low personal accomplishment, cynical attitudes, and negative self-evaluation related to employment (Maslach, Jackson, & Leiter, 1996). In other words, individuals in the work force who experience burnout may feel fatigue or apathy towards their work due to stress or overwork.

In recent years, nursing burnout has become an increasingly researched area, as this phenomenon appears to be on the rise (Happell, Martin, & Pinikahana, 2003). Maslach (1982) suggested that direct contact with patients is a stressful component of a number of jobs that increases the risk of burnout (Maslach, 1982). Considering the amount of direct patient contact that nurses have, it is important to consider ways in which we can protect nurses from experiencing the effects of burnout. Research conducted outside the United States indicates that psychiatric nurses exhibit higher levels of burnout than nurses in other specialties (Pompili et al., 2006, Sahraian et al., 2008). However, there is currently a dearth of literature examining psychiatric nurse burnout in the United States.

The purpose of this study was to determine what environmental factors might serve to prevent or alleviate symptoms associated with the construct of burnout. In a 2008 report, there were an estimated 3,063,162 licensed registered nurses living in the United States as of March 2008. This was an increase of 5.3 percent from March 2004, representing a net growth of 153,806 RNs (U.S. Department of Health and Human Services Health Resources & Services Administration, 2010). This reflects efforts made by various organizations to manage the nursing shortage (American Hospital Association, 2011). Nevertheless, issues of job satisfaction and retention are likely to remain important.

In 2009, the nursing shortage in the United States was projected to grow to 260,000 by the year 2025 (AACN, 2012). Parry (2008) notes that nurses are leaving the workforce for other occupations, and their skills and education are then lost to the nursing workforce. Turnover in nursing has the potential for several negative outcomes, including increased workload for existing nurses, increase in medical errors, and high cost to employers when trying to replace staff nurses (O'Brien-Pallas, Murphy, Shamian, Li, & Hayes, 2010). Considering the impact of nurse burnout on the health care system as a whole, it is important to examine this phenomenon more closely.

Factors Contributing to Burnout

Burnout may be dependent on individual characteristics or the characteristics of the environment. It is important to note what distinguishes one type of characteristic from the other. Individual characteristics include factors that are internal to the individual (i.e., mental and physical health characteristics, personality style, defense mechanisms etc.), whereas environmental characteristics (i.e., work hours, shift working, etc.) are solely related to the work setting (Ilhan, Durukan, Taner, Maral, & Bumin, 2008). The identification of individual and environmental characteristics that are potentially amenable to intervention and associated with burnout is an

important step toward developing interventions as an attempt to ultimately reduce burnout. In our approach to reviewing the literature on psychiatric nurse burnout, we searched for literature using this phrase in both the PsycINFO and CINAHL databases. Additionally, we searched these databases using various combinations of the terms “burnout,” “mental health,” “psychiatric,” “nursing” and “health care.” Although there is substantial literature on burnout in health care professions, including dentists, physicians, and nurses, there is limited research in the United States specifically examining contributions to burnout in psychiatric nursing. This is despite the fact that the number of psychiatric nurses practicing in the country has been estimated to be nearly 90,000 (Hanrahan, 2009). Much of what is known about psychiatric nurse burnout is based on research from other countries and it is not known whether this generalizes to the United States.

Environmental Characteristics Associated with Burnout

There are several environmental characteristics associated with psychiatric nurse burnout including: injuries related to the work environment, patient aggression (Flannery, Farley, Rego, & Walker, 2007), shift working (Stone et al., 2006), and quality of the work environment (Hanrahan, Aiken, McClaine, & Hanlon, 2010). Job autonomy has emerged as an important characteristic of the environment. In a study of 890 Israeli physicians representing various specialties, researchers examined the relationship between job autonomy and burnout (Shirom, Nirel, & Vinokur, 2006). Researchers found that autonomy was a negative predictor of burnout, functioning as a helpful or protective factor. Similar results indicating that autonomy influences job satisfaction were found in a review of literature in the United States examining stress among mental health social workers (Coyle, Edwards, Hannigan, Fothergill, & Burnard, 2005). However, neither of these studies included nurses in their samples. Given these findings, it is reasonable to expand the examination of autonomy as a protective factor to burnout in a United States sample of psychiatric nurses.

Shirom et al. (2006) also examined the role of caseload and work hours in predicting burnout. It was found that number of work hours positively predicted perceived amount of workload, but not burnout (Shirom et al., 2006). However, a more recent study from these researchers showed that although work hours and caseload were not predictive of burnout in physicians, perceived amount of workload did act as a predictor (Shirom, Nirel, & Vinokur, 2010). Considering the increased exposure to direct patient contact that nurses have, it is important to examine the role of work hours and caseload in psychiatric nurse burnout. Specifically, when considering potential environmental protective factors to burnout, the role of workload should be investigated as a potential moderator to this relationship.

Prevention of Nursing Burnout

Specific employee’ perceptions of their supervisors’ leadership style have been shown to protect nurses from burnout (Kanste, Kyngas, & Nikkila, 2007). The style of transformational leadership has emerged as particularly important. Nurse managers who were perceived as exhibiting a transformational type of leadership style were rewarding, optimistic, and forward-looking (Kanste et al., 2007). These types of leaders have also been defined as proactive, encouraging their associates to strive for higher levels of potential rather than expected performance (Bass & Avolio, 2004). In a study by Raup (2008) examining the impact of leadership styles in emergency department nurse managers on staff nurse turnover, participants were asked to complete the Multifactor Leadership Questionnaire (Bass, Avolio, Jung, & Berson, 2003). This questionnaire included scales of both Transformational and non-Transformational leadership behaviors. Results indicated a trend for lower staff nurse turnover in settings with Transformational leadership style compared to non-Transformational styles (Raup, 2008). A major limitation to this study was small sample size, and focus on ED nurse managers only. However, findings of this study show support for further investigation into the impact of leadership style in nurses’ job satisfaction.

In recent years increased attention has been given to models of hospital organization that strive to minimize the amount of nurse turnover and increase job satisfaction. “Magnet hospitals” that employ these models are thought to attract nurses because of their attempts to provide support and facilitate open communication among staff and nurse leaders (Upenieks, 2002). In a study examining magnet and non-magnet hospitals 305 clinical nurses were surveyed to determine differences in job satisfaction as related to organizational characteristics (Upenieks, 2002). “Nurse leaders” were also asked to give their perceptions of the value of their roles in today’s setting.

Overall participants working at non-magnet hospitals reported lower levels of job satisfaction. When asked about leadership traits, most participants in this study discussed the importance of leadership visibility and accessibility in the context of open communication and sharing information with staff nurses. Results indicated that nurse leaders were less visible in non-magnet hospitals compared to magnet organizations.

Authors of another recent study hypothesized that hospitals that were rated higher on organizational factors of the nurse practice environment (NPE) would have lower levels of psychiatric nurse burnout (Hanrahan et al., 2010). Archival data from a 1999 dataset from 353 psychiatric registered nurses located in the Commonwealth of Pennsylvania were used. These nurses reported that they provided direct patient care as staff nurses working on a psychiatric inpatient unit of a general hospital. Organizational factors of the NPE were measured using the Practice Environment Scale-Nurse Work Index (PES-NWI; Lake, 2002). Burnout was measured using the MBI. Results indicated that better work environments were associated with lower psychiatric nurse burnout (Hanrahan et al., 2010). More specifically, reports of better work environment were associated with lower scores on emotional exhaustion and depersonalization. Findings of this study suggest that the skill level of nurse managers, quality of nurse-physician relationships, and adequate patient to nurse staffing are among the strongest predictors of psychiatric nurse burnout (Hanrahan et al., 2010). These and the aforementioned findings lend support to further exploration of autonomy and leadership style as potential protective factors to burnout as aspects of the work environment that can be adjusted. In addition, given previous discussed findings of perceived workload, it is important to consider the role of this factor as part of the interplay of ways to address nurse burnout at a systems level. This information is likely valuable for future implementation of hospital staffing interventions and supervisor training.

Burnout and Depressive Symptoms

Prior research has identified the use of intellectualization, rationalization, and neutral responding when faced with conflict as individual characteristics that may buffer against the effects of burnout in nurses (Pompili et al., 2006). That being said, research evaluating individual characteristics often examines the relationship between mental health and burnout. Specifically, research examining the association of depressive symptoms and burnout in nurses indicates that the components of burnout overlap with symptoms of depression, as demonstrated by high correlations between the two constructs (Bakir, Ozer, Ozcan, Cetin, & Fedai, 2010).

However, the temporal relationship between depressive symptoms and burnout is bidirectional and suggestive of a dynamic relationship between the two constructs, such that increases in depressive symptoms predict subsequent increases in burnout and vice versa. Furthermore, engagement in physical activity moderates this bidirectional relationship such that the relationship between burnout and depressive symptoms was strongest among individuals who do not engage in regular physical activity and weaker among individuals who engage in high levels of physical activity.

With previous research indicating a bidirectional relationship between depressive symptoms and burnout and the potential for perceptions of nurse supervisor leadership style to protect against burnout (Kanste et al., 2007, Raup, 2008), it is important to examine the relationships among these variables to determine whether perceptions of nurse supervisor leadership style are part of the relationship between burnout and symptoms of

depression. In the event that supervisor leadership style mediates the relationship between burnout and depressive symptoms, such that the strength of this relationship decreases in the context of supervisor leadership style, then this would suggest that altering supervisor leadership styles could impact levels of burnout among psychiatric nurses.

Study Objectives

Given the dearth of literature examining psychiatric nurse burnout in the United States, particularly in the realm of potential protective factors, further research is needed to aid in understanding the role these variables in our hospital environment. The current study focuses exclusively on possible protective factors within the work environment of psychiatric nurses and does not include protective factors at the individual level. It was the intention of the researchers to focus solely on factors that can be directly addressed at the system/organizational level (i.e., work environment factors). It was expected that qualities of transformational leadership style (as identified by staff nurses regarding their supervisors) would be negatively associated with staff nurses' self-reported emotional exhaustion and depersonalization, and positively associated with feelings of personal accomplishment. Higher levels of work role autonomy were also expected to be negatively associated with emotional exhaustion and depersonalization, as well as positively associated with personal accomplishment. Although our primary focus was on aspects of the environment that could serve as protective factors, consideration of potential individual contributors to burnout seemed necessary. In other words, in order to observe the relationship between protective factors and burnout only, we hypothesized that the aforementioned associations would exist after controlling for symptoms of depression. This was due to the overlap of depressive symptoms and characteristics of burnout found in previous research (Bakir et al., 2010).

The role of workload was also examined. It was hypothesized that workload (as defined by the product number of patients served per shift and the number of hours worked per week) would moderate the relationships between transformational leadership and autonomy, and the three components of burnout. Finally, exploratory mediational analyses investigated the association between depressive symptoms and burnout, specifically whether transformational leadership might mediate the relationship between these symptoms and components of burnout.

Methods

Participants

A power analysis based on a medium effect size was conducted in order to estimate necessary sample size. For analyses with correlation coefficients (2-tailed test, $\alpha = .05$) to have a power of .85, 92 subjects were needed. For a regression analysis with two independent variables with medium effect sizes for the main effects and a medium effect size for the interaction term ($\alpha = .05$), 80 subjects were expected to provide a power of .86 for the main effect, and to detect the interaction. Participants were licensed staff nurses employed by hospitals in the New York State Office of Mental Health system and a state psychiatric hospital in Montana. Ninety-two participants completed an online survey; three participants' data were excluded from the study due to job descriptions that were other than staff nursing (i.e., administrative positions involving little to no contact with patients). Approximately one-third of participants were employed at the Montana State Hospital ($n = 29$) and sixty participants were employed at New York state hospitals. The majority of the sample was female (88%) and were licensed as RNs (61%). Forty-eight percent of participants reported working on adult units, 13% on forensic units, 12% on child/adolescent units, 12% on rehabilitation units, and 25% selected the "other unit" option; participants could indicate working on more than one type of unit.

Instrumentation

Demographic questionnaire

Participants completed a brief questionnaire that asked for age, gender, nursing degree/licensure, nursing employment history, and characteristics of their hospital/unit of employment. Participants were also asked to report the number of hours worked per week, number of patients served per shift, and hourly salary. Ethnicity was omitted from the questionnaire, as this information could be potentially identifying.

Burnout

The Maslach Burnout Inventory-Human Services Survey (MBI-HSS) is 22-item self-report measure of burnout (Maslach et al., 1996). The Human Services Survey of MBI is used for workers who spend considerable time working with other people. The items are grouped into three subscales: Emotional exhaustion, Depersonalization, and Personal accomplishment. Emotional exhaustion is characterized by items such as "I am emotionally drained from my work." Depersonalization captures negative and cynical attitudes towards patients with items such as "I feel I treat some recipients as if they were impersonal objects." The final scale, personal accomplishment, assesses how the individual evaluates him or herself, particularly in relation to working with clients. Items assessing personal accomplishment include, "I have accomplished many worthwhile things in this job." Items are rated on 0 (*never*) to 6 (*everyday*) Likert scales. In the current sample internal consistency reliability coefficients (Cronbach's *alpha*) for the subscales were .919 for Emotional Exhaustion, .609 for Depersonalization, and .742 for Personal Accomplishment, with Depersonalization falling below the conventional .70 adequacy range. Test-retest reliabilities assessed by other researchers (Jackson et al., 1986, Lee and Ashforth, 1993, Leiter, 1990, Leiter and Durup, 1996) have ranged from low to moderately high, with all coefficients significant beyond the .001 level.

Transformational leadership

Transformational leadership style was assessed using the Multifactor Leadership Questionnaire (MLQ 5 × -Short; Bass & Avolio, 2004). This survey consists of 45 items that measure a number of leadership styles. The dimensions of the MLQ are Transformational leadership, Transactional leadership, Passive style, and Avoidant style. Extra Effort, Effectiveness, and Satisfaction are also measured. For the purposes of this study, the 20 items of the MLQ assessing Transformational leadership were examined. Items are rated on 0 (*not at all*) to 4 (*frequently, if not always*) Likert scales. For all items participants are asked to keep one individual in mind whom they are rating. For example, "The person I am rating goes beyond self-interest for the good of the group" and "The person I am rating helps me develop my strengths." Reliability coefficients for the MLQ Form 5 × -Short have ranged from .74 to .91 (Bass & Avolio, 2004). The MLQ has also been shown to have robust validity (Antonakis, Avolio, & Sivasubramaniam, 2003). The MLQ 5 × -Short is commonly used in nursing leadership research and has demonstrated consistent validity across different leadership roles, organizations, gender, and cultures worldwide (Bass & Avolio, 2004). In the current sample, the internal consistency reliability coefficient (Cronbach's *alpha*) for the Transformational Leadership scale was .960.

Autonomy

Level of work role autonomy was measured using the Nursing Work Index—Revised (NWI-R; Aiken & Patrician, 2000). The NWI-R is a 57-item self-report measure assessing hospital organizational characteristics. These characteristics are divided into subscales such as Autonomy, Control over the practice setting, Nurse-physician relationship, and Organizational support (NWI-R; Aiken & Patrician, 2000). For the purposes of this study, only the Autonomy subscale was examined, yielding a total of 5 items. For all items, participants are asked to indicate the extent to which they agree that the items are present in their current job. For example, "Nursing controls its own practice" and "[Nurses have] Freedom to make important patient care and work decisions." Items are rated

on 1 (*strongly agree*) to 4 (*strongly disagree*) Likert scales. In the current sample, the internal consistency reliability coefficient (Cronbach's *alpha*) for the Autonomy scale was .787.

Depressive symptoms

Three of the six items used to assess depressive symptoms on the Brief Symptom Inventory (BSI; Derogatis, 1975; e.g., Feeling lonely, Feeling blue, and Feeling no interest in things) were used as an index of depressive symptoms. The remaining three items of this scale (e.g., Thoughts of ending one's life, Feeling hopeless about the future, and Feelings of worthlessness) were omitted from the survey due to ethical concerns regarding participants' possible reports of harm to self or others and the researchers' inability to assess risk. The reliability coefficient (Cronbach's *alpha*) for the three items that were used was .903.

Procedures and Data Analyses

Permission for the current study was obtained from The University of Montana's Institutional Review Board (IRB). Because the role of hospitals was limited solely to the distribution of recruitment materials, the OMH Director of Performance Measurement and Evaluation and the Hospital Administrator at the Montana site deemed it unnecessary to go through each hospital's IRB review process. Data collection began in the fall of 2009 and concluded in the spring of 2010. Hard copy and electronic recruitment materials were sent to the executive directors and directors of nursing at hospitals in NY and MT. These sites were provided with IRB approved flyers and the web address for an anonymous online survey hosted by a University of Montana web server. It was explained to hospital directors that the study sought to understand possible environmental factors that might help protect nurses from the effects of burnout. All staff nurses were invited to participate, provided that they were licensed and had positions involving direct patient contact. Incentives for participation involved an opportunity to enter a raffle for one of ten, \$30 Amazon.com gift cards.

Our analytic strategy involved the following: Bi-variate correlation of burnout factors with transformational leadership and autonomy scores; computing partial correlations of these variables while controlling for depressive symptoms from the BSI and state (see sample differences by state in Results); and, conducting hierarchical regression analyses examining workload as a possible moderator to the relationship between components of burnout and transformational leadership and autonomy scores.

Finally, three exploratory bootstrapping analyses (see Preacher & Hayes, 2008) were conducted to test whether transformational leadership style might mediate the relationship between current depressive symptoms and burnout. In the bootstrapping method, the data are re-sampled at random a predetermined number of times in order to create a sampling distribution of the indirect effect. Hayes (2009) recommends re-sampling the data at least 5,000 times, and this procedure in turn creates a 95% confidence interval for the indirect effect. If this confidence interval does not contain zero, a significant indirect effect has been detected. This technique for identifying indirect effects is more robust than traditional statistical tests (Sobel tests and causal steps approach to testing for mediation) and is void of assumptions regarding the shape of the sampling distribution (Hayes, 2009). Due to the size of the sample in the current study, the bootstrapping method was chosen over the utilization of other mediation techniques.

Results

New York and Montana nurses differed significantly in both demographic and employment characteristics. New York nurses were older, had been employed longer both in the field of nursing as well as at their specific hospital when compared to Montana nurses. New York nurses also reported working at smaller hospitals (as measured by number of beds) and were paid more (as measured by hourly salary in dollars). Nine participants from New York chose not to provide their hourly salaries.

It was expected that qualities of transformational leadership style (as identified by staff nurses regarding their supervisors) would be negatively associated with staff nurses' self-reported emotional exhaustion and depersonalization, and positively associated with feelings of personal accomplishment. Higher levels of work role autonomy were also expected to be negatively associated with emotional exhaustion and depersonalization, as well as positively associated with personal accomplishment. Means, standard deviations, bi-variate, and partial correlations among burnout factors, transformational leadership scores, and autonomy scores are displayed in Table 1. Nurses from the two states differed on two of the primary variables under study. Montana nurses had higher levels of Autonomy ($M = 14.40$, $SD = 2.96$) than their New York counterparts ($M = 12.48$, $SD = 3.32$; $t[86] = 2.64$, $p = .01$), as well as higher levels of Depersonalization (Montana $M = 14.47$, $SD = 6.07$; New York $M = 11.16$, $SD = 4.99$, $t[87] = 2.73$, $p = .008$). Consistent with expectations, burnout factor scores of emotional exhaustion and depersonalization were significantly and negatively related to autonomy scores. In addition, transformational leadership scores were significantly and negatively related to emotional exhaustion and trended toward significance in relation to depersonalization. Personal accomplishment scores were significantly associated with both transformational leadership and autonomy scores.

Table 1. Means, Standard Deviations, Bivariate Correlations and Partial Correlations (controlling for depressive symptoms and location) for Transformational Leadership Scores, Autonomy Scores, and Components of Burnout.

Variable	<i>M (SD)</i>	1	2	3	4	5
Transformational Leadership	3.23 (1.00)	-	.629**	-.323**	-.138	.286**
Autonomy	13.11 (3.31)	.622**	-	-.356**	-.349**	.361**
Emotional Exhaustion	31.27 (12.16)	-.373**	-.402**	-	.512**	-.331**
Depersonalization	12.24 (5.56)	-.187 †	-.289**	.536**	-	-.379**
Personal Accomplishment	43.84 (7.82)	.338**	.380**	-.417**	-.444**	-

† $p < .10$. * $p < .05$. ** $p < .01$. $n = 80 - 88$.

Note. Bi-variate correlations are below the diagonal, while partial correlations (controlling for depressive symptoms and location) are above the diagonal.

We also hypothesized that the aforementioned associations would exist after controlling for symptoms of depression. Table 1 also displays partial correlations among burnout factors, transformational leadership scores, and autonomy scores after controlling for depressive symptoms as measured by the subset of BSI depression items, as well as a dummy-coded variable for state. With the exception of the relationship between transformational leadership scores and depersonalization scores, the significance levels of the associations among our variables of interest remained relatively unchanged; Fisher's z comparisons verified that none of the differences between the zero-order and partial correlations even approached significance.

Moderation Analyses

The role of workload was also examined. It was hypothesized that workload (as defined by the product number of patients served per shift and the number of hours worked per week) would moderate the relationships between transformational leadership and autonomy, and the three components of burnout (dependent variable). Three hierarchical multiple regression analyses were conducted to investigate whether workload would moderate the relationship between transformational leadership and the three burnout components, and autonomy and these burnout components. Variables of workload, transformational leadership, and autonomy were converted to z -scores in order to clarify the interpretation of unstandardized $Beta$ coefficients in the regression and analyses and, most importantly, to center each variable on its mean for the computation of the multiplicative interaction variables; interactions between workload and the other two predictor

variables (Transformational leadership and Autonomy) were created by multiplying the workload z-score with the z-score of each predictor variable.

In each regression analysis, workload was entered in the first block, transformational leadership scores and autonomy scores in the second block, and the workload by transformational leadership interaction and workload by autonomy interaction variables were entered in the third block. Table 2 provides an overview of the results of the three hierarchical regression analyses discussed below.

Table 2. Regression Equations Using Workload, Autonomy, Transformational Leadership, and their Associated Interactions to Predict Burnout Components of Emotional Exhaustion, Depersonalization, and Personal Accomplishment (controlling for Location).

Burnout Component	Step and Variable	β	Adj. R^2	ΔR^2	Sig. ΔF
Emotional Exhaustion	Step 1		-.018	.008	.743
	Location	.049			
	WL	.064			
	Step 2		.144	.179	.001
	Location	-.041			
	WL	.118			
	AUTO	-.191			
	TL	-.290*			
	Step 3		.134	.012	.584
	Location	-.040			
	WL	-.115			
	AUTO	-.176			
	TL	-.275 †			
	WL x AUTO	.017			
	WL x TL	.250			
Depersonalization	Step 1		.083	.105	.012
	Location	-.278*			
	WL	.219*			
	Step 2		.167	.102	.009
	Location	-.389*			
	WL	.223*			
	AUTO	-.339*			
	TL	.001			
	Step 3		.147	.002	.924
	Location	-.388*			
	WL	.134			
	AUTO	-.335*			
	TL	.006			
	WL x AUTO	.001			
	WL x TL	.097			
Personal Accomplishment	Step 1		-.007	.018	.483
	Location	.086			
	WL	-.118			
	Step 2		.151	.174	.000
	Location	.157			
	WL	-.167			
	AUTO	.190			

	TL	.280*			
	Step 3		.132	.004	.839
	Location	.152			
	WL	-.030			
	AUTO	.192			
	TL	.274 †			
	WL x AUTO	.026			
	WL x TL	-.155			

Note. TL = transformational leadership; AUTO = autonomy; EE = emotional exhaustion; DEP = depersonalization; PA = personal accomplishment; WL = workload. β = Standardized values.

† $p < .10$, * $p < .05$.

Emotional exhaustion

At step two, after entering location and workload, and then the first two variables of interest, transformational leadership and autonomy (environmental factors), scores at step two, the model explained 14.4% (adjusted R^2 reported) of the variance in emotional exhaustion scores, $F(4, 76) = 4.37$, $p = .003$. At step three the two interaction terms were entered into the equation; no evidence for the moderating effect of workload was obtained. Specifically, the workload by transformational leadership style and workload by autonomy interactions were not statistically significant predictors of emotional exhaustion. At step three the only variable with a trend for predicting emotional exhaustion was transformational leadership style ($\beta = -.275$, $p = .053$).

Depersonalization

8.3% of the variance in depersonalization scores was explained by location and workload at step one. After the entry of transformational leadership scores and autonomy at step two the total variance explained by the model was 16.7%, $F(4, 78) = 5.11$, $p = .001$. Once again evidence for the moderating effect of workload was not obtained; when the two interaction terms were entered at step three, there was no significant increase in predicted variance and the only variable of interest predicting depersonalization was autonomy ($\beta = -.335$, $p = .027$).

Personal accomplishment

After the entry of location and workload and then scores for transformational leadership and autonomy, two environmental protective factors, at step two, the total variance explained by the model was 15.1%, $F(4, 78) = 4.64$, $p = .002$. At step three, no improvement to the model was noted when the two interaction terms were entered into the equation; only transformational leadership style showed a trend for predicting emotional exhaustion ($\beta = .274$, $p = .054$).

Exploratory Analyses

Finally, exploratory mediational analyses investigated the association between depressive symptoms and burnout, specifically whether transformational leadership might mediate the relationship between these symptoms and components of burnout. These analyses were conducted testing a mediating role for transformational leadership in the relationship between depressive symptoms and the three burnout scales using bootstrapping techniques. Results of these exploratory analyses testing for mediation, each using a 95% confidence interval (CI) and 5000 bootstrap samples, failed to provide evidence to indicate that transformational leadership style mediates the relationship between depressive symptoms and the burnout component of emotional exhaustion ($\beta = .088$; CI = $-.079$ to 2.068) or the relationship between depressive symptoms and the burnout component of depersonalization ($\beta = .155$; CI = $-.061$ to $.625$). However, transformational leadership style was found to act as a significant mediator ($\beta = -.499$; CI = -1.286 to $-.039$) in the relationship between depressive symptoms and the burnout component of personal accomplishment. Specifically, depressive

symptoms were negatively associated with perceived transformational leadership style ($\beta = -.240$; $p = .049$) and with the burnout measure's component of personal accomplishment ($\beta = -2.944$; $p = .001$). Transformational leadership style was positively associated with the burnout component of personal accomplishment ($\beta = 2.08$; $p = .009$), and when entered into the model as a possible mediator, the strength of the association between depressive symptoms and personal accomplishment decreased ($\beta = -2.446$; $p = .006$). Although this effect is likely small, this suggests a partial mediation, and that the relationship between depressive symptoms and the burnout component of personal accomplishment may be influenced by nurses' perceptions of the leadership style in their work environment.

Discussion

Overall, results of this study indicate that the participants were experiencing high levels of emotional exhaustion and depersonalization when compared to the MBI normative sample of mental health workers, however, it is important to note that this normative sample is not restricted to psychiatric nurses alone (Maslach et al., 1996). Previous research examining nurse burnout has focused largely on other specialties, such as medical-surgical nursing (Hanrahan et al., 2010). This study is one of the first to our knowledge that examines environmental factors that may protect nurses in a psychiatric setting.

The correlation analyses indicate that the components of burnout appear to be influenced in different ways. Future research may seek to investigate the separate components of burnout more in depth and examine how they each may possibly be modified by environmental factors. In the current study, transformational leadership style correlated negatively with emotional exhaustion and was positively correlated with personal accomplishment. Autonomy was negatively correlated with emotional exhaustion and depersonalization and positively correlated with personal accomplishment. The first hypothesis, that transformational leadership and autonomy scores would be negatively correlated with scores on emotional exhaustion and depersonalization and positively correlated with scores on personal accomplishment was only partially supported. Somewhat surprisingly, transformational leadership was not strongly correlated with depersonalization (although this non-significant correlation was in the negative direction, as predicted). It is possible that this correlation ($r = -.187$, which represents a small effect) would be significant given a larger sample size. Alternatively, depersonalization may be a construct that is less related to transformational leadership than emotional exhaustion and personal accomplishment. This may be because the construct of depersonalization is more closely tied to trait characteristics of an individual rather than the environment.

The second hypothesis was not supported. No significant workload x protective factor moderation terms were found in the regression analyses. However, the exploratory mediation analysis revealed that nurses' perceptions of transformational leadership mediate the relationship between the depressive symptoms and the burnout component of personal accomplishment (but not the burnout components of emotional exhaustion or depersonalization). Such a finding highlights how altering an environmental characteristic (e.g., leadership style of nurse supervisors), could alter individual characteristics and reduce the caustic effects of depressive symptomatology and burnout.

Implications and Future Directions

In a national poll of 138 health care recruiters in 2005, the average RN turnover rate was found to be 13.9%, and the vacancy rate was found to be 16.1% (AACN, 2012). In light of this information, additional research is needed that seeks to identify factors that reduce risks for burnout and turnover. Factors contributing to nursing burnout appear to vary widely; however, the current study identifies possible protective factors in nurse supervisor leadership styles, which are characteristic to the workplace. These findings are important because nurse supervisor leadership styles may be amenable to change through training and intervention. Interventions geared towards educating staff, especially nurse supervisors, about the deleterious effects of burnout and providing

skills that can help protect against burnout, may well be highly cost effective if they reduce turnover. In a review of interventions to improve staff morale, Gilbody et al. (2006) report on a study that showed \$62,000 in hospital net cost savings due to reduced staff sickness and turnover.

The current study expands upon the findings of Hanrahan et al. (2010) and demonstrates that leadership style and work role autonomy are likely to be environmental factors that protect against burnout in nurses, as suggested in previous research (Kanste et al., 2007, Mrayyan, 2004). A recent finding by Hanrahan et al. (2010) suggests that not only are relationships between staff nurses and nurses leaders likely to be associated with burnout or its reduction, but relationships between nurses and physicians may also be linked with burnout. Future research that investigates aspects of physician-nurse relationships in relation to nurse burnout may have important implications for the prevention of nurse burnout and turnover.

The present findings must be considered in the context of the following important limitations. First, this study utilized a cross-sectional design. While the results suggest that transformational leadership style among nurse supervisors is associated with two components of burnout, due to the correlational nature of this study, we are unable to determine causal inferences regarding the relationship between this leadership style and burnout. Second, because this study recruited nurses from state hospitals in New York and Montana, the results may not generalize to other geographic areas and private hospitals. In addition, the participants for this study were self-selected, and the actual participation rate cannot be determined; therefore, we cannot know if the findings would generalize to individuals who were targeted by our recruitment strategy but declined to participate. In a similar vein, a key variable under investigation was nurse workload. Given that nurses who participated in this study were permitted to complete the online survey while at work, nurses with higher workloads may have been less likely to complete the online survey during the workday. Our decision to omit some items from the BSI that would have reflected more severe depressive symptoms may also have excluded some data from individuals in this category. Thus, our findings thus may not account for more severe depressive syndromes that may include the excluded symptoms. There were also significant differences between nurses from New York and Montana in regards to demographic and employment characteristics (see Table 1), though we controlled for these differences in our analyses. Finally, the small sample size and a lack of statistical power may have impeded our ability to detect significant associations and interactions between our predictor and outcome variables.

In conclusion, this study identifies nurse supervisor leadership styles as a possible environmental protective factor that, with future research, may prove to be associated with lower rates of nurse burnout and turnover. The embodiment of transformational leadership by nurse supervisors may help to reduce burnout in a broad sense, while also reducing the impact of depressive symptoms on feelings of personal accomplishment in psychiatric nurses. Given the ever-increasing demands being placed on our healthcare system and the critical roles that nurses play in the provision of high quality care, continued efforts are needed to reduce burnout and turnover among nurses so that the profession can retain high quality nurses for years to come.

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¹Department of Psychology, Skaggs Building Room 143, The University of Montana, Missoula, MT 59812. Tel.: + 1 812 320 2089 (mobile).

²Department of Psychology, Skaggs Building Room 143, The University of Montana, Missoula, MT 59812. Tel.: + 1 406 243 4183 (office).